

BRUHATH BANGALORE MAHANAGARA PALIKE

Name of the Agency : **Technical Manager (West), KRIDL,**
Bangalore.

Name of the Work : Improvements to road from Hesaraghatta Main
road to Babanna Layout Market area in Ward
No.12, in Shettyhalli Sub Division, BBMP,
Bangalore.

Estimate Cost : Rs.

QUALITY CONTROL REPORTS TO

Asst. Executive Engineer,
Shettyhalli Sub Division,
Dasarahalli Zone,
BBMP, Bangalore.

CIVIL-TECH CONSULTANTS & ENGINEERS

Building & Highway Material Testing Laboratory
NABL ACCREDITED LABORATORY AS PER ISO / IEC - 17025:2005
No.23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara,
Basaveshwaranagar, Bangalore - 560 079.



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Job No.: CTCE/BBMP/W.No.12/KRIDL/BM/Bitumen/2014-15

13.08.2014

BITUMEN CONTENT DETERMINATION OF BITUMINOUS MACADAM MIX

AS per IRC:SP:-1984

Client	Asst. Executive Engineer, Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.
AGENCY	Technical Manager (West), KRIDL, Bangalore.
NAME OF THE WORK	Improvements to road from Hesaraghatta Main road to Babanna Layout Market area in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore.
REFERENCE	BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014
SAMPLE I/D	Road from Hesaraghatta Main road tp Babanna Layout Market area in Ward No.12, BBMP, Bangalore.
DATE OF TESTING	13.08.2014

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	483	481.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	17	18.50
7. Bitumen content in %	3.40	3.70
8. Average	3.55	

Note:

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13.08.2014

GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX

As per IS2386 and IRC:SP:11-1984

Client	Asst. Executive Engineer, Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.
AGENCY	Technical Manager (West), KRIDL, Bangalore.
NAME OF THE WORK	Improvements to road from Hesaraghatta Main road to Babanna Layout Market area in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore.
REFERENCE	BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014
SAMPLE I/D	Road from Hesaraghatta Main road tp Babanna Layout Market area in Ward No.12, BBMP, Bangalore.
DATE OF TESTING	13.08.2014



GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	32.52	6.73	6.73	93.27	90-100
13.2	96.65	20.01	26.74	73.26	56-88
4.75	248.5	51.45	78.19	21.81	16-36
2.36	51.23	10.61	88.80	11.20	4-19
0.3	36.25	7.51	96.30	3.70	2-10
0.075	6.35	1.31	97.62	2.38	0-8

p The results indicated above are based on the tests carried	Trail 2				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	39.65	8.23	8.23	91.77	90-100
13.2	80.25	16.67	24.90	75.10	56-88
4.75	265.5	55.14	80.04	19.96	16-36
2.36	58.36	12.12	92.16	7.84	4-19
0.3	20.32	4.22	96.38	3.62	2-10
0.075	5.85	1.21	97.60	2.40	0-8

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**QUALITY CONTROL REPORTS FOR
SEMI DENSE BITUMINOUS CONCRETE**



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11.08.2014

TEST REPORT ON DETERMINATION OF BITUMEN CHARACTERISTICS

CLIENT	:	Asst. Executive Engineer, Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.
AGENCY	:	Technical Manager (West), KRIDL, Bangalore.
NAME OF THE WORK	:	Improvements to road from Hesaraghatta Main road to Babanna Layout Market area in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore.
REFERENCE	:	BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014
SOURCE OF LOCATION	:	Hot mix Plant, Bangalore
DATE OF TESTING	:	11.08.2014



The results of the tests conducted on the bitumen sample.

Sl. No	Description	Test Method as per IS	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 °C, 1/10 mm	IS :1203 -1978 (RA-2009)	68	60 to 70
2	Softening point, °C	IS :1205 -1978 (RA-2009)	43	Min. 45
3	Ductility at 27°C, cm	IS :1208 -1978 (RA-2009)	100 >	Min. 50
4	Flash Point, °C	IS :1209 -1978 (RA-2009)	296	Min. 220

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11.08.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	Asst. Executive Engineer, Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.
Agency	Technical Manager (West), KRIDL, Bangalore.
Name of the Work	Improvements to road from Hesaraghatta Main road to Babanna Layout Market area in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore.
Reference	BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014
Source / Location	Hot Mix Plant, Bangalore
Type of Mix	Semi Dense Bituminous Concrete
Date of Testing	11.08.2014



Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	378	379	21.00
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	79	80	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	84.5	299	
4	Aggregate Impact value = percent fines $100 * (W_2 / W_1) \%$	20.90	21.11	

Comments:

→ Maximum allowable Aggregate Impact value for Semi Dense Bituminous Concrete is 27%

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Reference	BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014
Source / Location	Hot Mix Plant, Bangalore
Type of Mix	Semi Dense Bituminous Concrete
Date of Testing	11.08.2014



Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	381	382	21.36
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	81	82	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	84.5	300	
4	Aggregate Impact value = percent fines $100 * (W_2/W_1)\%$	21.26	21.47	

Comments:

→ Maximum allowable Aggregate Impact value for Semi Dense Bituminous Concrete is 27%

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Reference	BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014
Source / Location	Hot Mix Plant, Bangalore
Type of Mix	Semi Dense Bituminous Concrete
Date of Testing	11.08.2014



Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	386	387	22.38
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	86	87	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	84.5	300	
4	Aggregate Impact value = percent fines $100 * (W_2/W_1)\%$	22.28	22.48	

Comments:

→ Maximum allowable Aggregate Impact value for Semi Dense Bituminous Concrete is 27%

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Source / Location	Hot Mix Plant, Bangalore
Type of Mix	Semi Dense Bituminous Concrete
Date of Testing	11.08.2014



Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	392	391	23.12
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	90	91	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	84.5	300	
4	Aggregate Impact value = percent fines $100 * (W_2/W_1)\%$	22.96	23.27	

Comments:

→ Maximum allowable Aggregate Impact value for Semi Dense Bituminous Concrete is 27%

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Reference	BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014
Source / Location	Hot Mix Plant, Bangalore
Type of Mix	Semi Dense Bituminous Concrete
Date of Testing	11.08.2014



Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	392	393	23.57
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	92	93	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	84.5	300	
4	Aggregate Impact value = percent fines $100 * (W_2/W_1)\%$	23.47	23.66	

Comments:

→ Maximum allowable Aggregate Impact value for Semi Dense Bituminous Concrete is 27

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: 11.08.2014

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	: Asst. Executive Engineer, Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.
Agency	: Technical Manager (West), KRIDL, Bangalore.
Name of Work	: Improvements to road from Hesaraghatta Main road to Babanna Layout Market area in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore.
Reference	: BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014
Technical Reference	: IS 2386(Part 1) 1963 (RA 2007)
Type of Mix	: Semi Dense Bituminous Concrete
Date of Testing	: 11.08.2014



Result : Flakiness Index = 11.52%

Elongation Index = 13.03%

Result : Combined Flakiness & Elongation index 24.55%

Comments:

Maximum allowable Flakiness & Elongation Index for Dense Graded Bituminous Macadam is 30%

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QUALITY CONTROL REPORTS FOR
GRANULAR SUB BASE (GSB)



CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

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Job No.: CTCE/BBMP/W.No.12/KRIDL/SDBC/Shape_T/2014-15

: 11.08.2014

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	: Asst. Executive Engineer, Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.
Agency	: Technical Manager (West), KRIDL, Bangalore.
Name of Work	: Improvements to road from Hesaraghatta Main road to Babanna Layout Market area in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore.
Reference	: BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014
Technical Reference	: IS 2386(Part 1) 1963 (RA 2007)
Type of Mix	: Semi Dense Bituminous Concrete
Date of Testing	: 11.08.2014



Result : Flakiness Index = 12.20%

Elongation Index = 13.65%

Result : Combined Flakiness & Elongation index 25.85%

Comments:

Maximum allowable Flakiness & Elongation Index for Dense Graded Bituminous Macadam is 30%

Note:

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ಎಸ್.ಎಂ ರಸ್ತೆ, ರವೀಂದ್ರನಗರ, ಬೆಂಗಳೂರು

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Reference	: BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014
Technical Reference	: IS 2386(Part 1) 1963 (RA 2007)
Type of Mix	: Semi Dense Bituminous Concrete
Date of Testing	: 11.08.2014



Result : Flakiness Index = 11.26%

Elongation Index = 13.05%

Result : Combined Flakiness & Elongation index 24.31%

Comments:

Maximum allowable Flakiness & Elongation Index for Dense Graded Bituminous Macadam is 30%

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Technical Reference	: IS 2386(Part 1) 1963 (RA 2007)
Type of Mix	: Semi Dense Bituminous Concrete
Date of Testing	: 11.08.2014



Result : Flakiness Index = 12.36%

Elongation Index = 13.85%

Result : Combined Flakiness & Elongation index 26.21%

Comments:

Maximum allowable Flakiness & Elongation Index for Dense Graded Bituminous Macadam is 30%

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Technical Reference	: IS 2386(Part 1) 1963 (RA 2007)
Type of Mix	: Semi Dense Bituminous Concrete
Date of Testing	: 11.08.2014



Result : Flakiness Index = **11.98%**

Elongation Index = **13.09%**

Result : Combined Flakiness & Elongation index **25.07%**

Comments:

Maximum allowable Flakiness & Elongation Index for Dense Graded Bituminous Macadam is 30%

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Job No.: CTCE/BBMP/W.No.12/KRIDL/SDBC/Stripping/2014-15

14.08.2014

Stripping Value of Road Aggregates (Static Immersion Test)

IS: 6241

Client	Asst. Executive Engineer, Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.
Agency	Technical Manager (West), KRIDL, Bangalore.
Name of the work	Improvements to road from Hesaraghatta Main road to Babanna Layout Market area in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore.
Reference	BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014
Type of Mix	Semi Dense Bituminous Concrete
Date of Testing	14.08.2014



Type of binder : 60/70
 Percentage of binder used : 5.0% by wt.
 Total weight of aggregate : 200 g
 Total weight of binder : 10.0 g
 Temperature of water-bath : 40° C

Observation Number	Stripping, Percentage	Average, Percentage	Average Retained Coating, %
1	3.4	3.50	96.50
2	3.5		
3	3.6		

Comments:

→ Minimum allowable Aggregate retained coating for Semi Dense Bituminous Concrete is 95%

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Job No.: CTCE/BBMP/W.No.12/KRIDL/SDBC/SDBC/Sp_Wa/2014-15

14.08.2014

Specific Gravity And Water Absorption Test

IS: 2386 Part III

Client	Asst. Executive Engineer, Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.
Agency	Technical Manager (West), KRIDL, Bangalore.
Name of the Work	Improvements to road from Hesaraghatta Main road to Babanna Layout Market area in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore.
Reference	BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014
Type of Mix	Semi Dense Bituminous Concrete
Source / Location	Hotmix Plant, Bangalore
Date of Testing	14.08.2014



Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	$W_1 g$	2022	2023	2024	
2	Weight of basket suspended in water	$W_2 g$	755	2020	755	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s g$	1267	1268	1269	
4	Weight of saturated surface dry aggregate in air	$W_3 g$	2014	2015	2016	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_s) g$	747	747	747	
6	Weight of oven dried aggregate	$W_4 g$	1997	1998	1999	
7	Specific Gravity	$W_4 / (W_3 - W_s)$	2.673	2.675	2.676	2.675
8	Apparent Specific gravity	$W_4 / (W_4 - W_s)$	2.736	2.737	2.738	2.737
9	Water Absorption	$((W_3 - W_4) * 100) / W_4$	0.85%	0.85%	0.85%	0.85%

Comments:

→ Maximum allowable Aggregate Water absorption value for Semi Dense Bituminous Concrete is 2.0%

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Job No.: CTCE/BBMP/W.No.12/KRIDL/SDBC/Bit/2014-15

14.08.2014

BITUMEN CONTENT DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

AS per IRC:SP:-1984

CLIENT	Asst. Executive Engineer, Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.
AGENCY	Technical Manager (West), KRIDL, Bangalore.
NAME OF THE WORK	Improvements to road from Hesaraghatta Main road to Babanna Layout Market area in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore.
REFERENCE	BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014
SAMPLE I/D	Road from Hesaraghatta Main Road to Babanna Layout market area Ward No.12, BBMP, Bangalore.
DATE OF TESTING	14.08.2014

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	475	474
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	25	26.00
7. Bitumen content in %	5.00	5.20
8. Average	5.10	



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14.08.2014

BITUMEN CONTENT GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

As per IS2386 and IRC:SP:11-1984

CLIENT	Asst. Executive Engineer, Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.
AGENCY	Technical Manager (West), KRIDL, Bangalore.
NAME OF THE WORK	Improvements to road from Hesaraghatta Main road to Babanna Layout Market area in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore.
REFERENCE	BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014
SAMPLE I/D	Road from Hesaraghatta Main Road to Babanna Layout market area Ward No.12, BBMP, Bangalore.
DATE OF TESTING	14.08.2014



GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	28.53	6.01	6.01	93.99	90-100
4.75	259.6	54.65	60.66	39.34	35-51
2.36	55.65	11.72	72.37	27.63	24-39
1.18	36.62	7.71	80.08	19.92	15-30
0.3	31.22	6.57	86.66	13.34	9-19
0.075	25.85	5.44	92.10	7.90	3-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	32.62	6.88	6.88	93.12	90-100
4.75	262.3	55.34	62.22	37.78	35-51
2.36	52.32	11.04	73.26	26.74	24-39
1.18	36.21	7.64	80.90	19.10	15-30
0.3	32.62	6.88	87.78	12.22	9-19
0.075	31.25	6.59	94.37	5.63	3-8

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14.08.2014

Aggregate Gradation Test

IS : 2386 Part I

Client	Asst. Executive Engineer, Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.
Agency	Technical Manager (West), KRIDL, Bangalore.
Name of the Work	Improvements to road from Hesaraghatta Main road to Babanna Layout Market area in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore.
Reference	BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014
Sample I / D	Hot Mix Plant, Bangalore
Type of Mix	Semi Dense Bituminous Concrete (SDBC)
Date of Testing	14.08.2014



Total Weight of Sample: 5350 gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Grade-II As per MORTH	Remarks
13.2	0	0.0	0	100	100	Gradation satisfies Grade-II MORTH specification
9.5	400	7.5	7.48	92.52	90-100	
4.75	2655	49.6	57.10	42.90	35-51	
2.36	690	12.9	70.00	30.00	24-39	
1.18	480	9.0	78.97	21.03	15-30	
0.3	410	7.7	86.64	13.36	9-19	
0.075	385	7.2	93.83	6.17	3-8	

Total Weight of Sample: 5400 gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Grade-II As per MORTH	Remarks
13.2	0	0.0	0	100	100	Gradation satisfies Grade-II MORTH specification
9.5	365	6.8	6.76	93.24	90-100	
4.75	2685	49.7	56.48	43.52	35-51	
2.36	835	15.5	71.94	28.06	24-39	
1.18	560	10.4	82.31	17.69	15-30	
0.3	350	6.5	88.80	11.20	9-19	
0.075	300	5.6	94.35	5.65	3-8	

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Job No: CTCE/BBMP/W.No.12/KRIDL/GSB-1/GR/2014-15

Date : 03.07.2014

GRADATION FOR GSB-I (CLOSE GRADED)

IS: 2720 (Part 4)

Client : Asst. Executive Engineer, Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.

Agency : Technical Manager (West), KRIDL, Bangalore.

Name of work : Improvements to road from Hesaraghatta Main road to Babanna Layout Market area in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore.

Reference : BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014

Date of Testing : 03.07.2014

Sample Source : GSB Mix Plant Bangalore. **Oven Dry Wt (gm)** : 8115



Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits
75.0	0	0	0.00	0	100
53.0	265	265	3.27	96.73	80-100
26.50	3000	3265	40.23	59.77	55-90
9.50	1250	4515	55.64	44.36	35-65
4.75	950	5465	67.34	32.66	25-55
2.36	850	6315	77.82	22.18	20-40
0.425	650	6965	85.83	14.17	10-25
0.075	750	7715	95.07	4.93	3-10
PAN	400				
Total	8115				



Remarks: Satisfies MORTH Specifications as per Table 400-1, Grading I

Note:

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AE 12
ಸಹಾಯಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಭಿಯಂತರರು
ಶಿಬಿರಕಟ್ಟೆ ಕಾರವಣ್ಣಿ, ದಾಸರಹಳ್ಳಿ ವಲಯ
ಬೃಹತ್ ಮಹಾನಗರ ಮಹಾನಗರ ಪಾಲಿಕೆ
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Job No: CTCE/BBMP/W.No.12/KRIDL/GSB-1/AL/2014-15

Date : 03.07.2014

ATTERBERG LIMITS TEST FOR GSB (CLOSE GRADED)

IS : 2720 (Part - 5)

Client : Asst. Executive Engineer, Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.

Agency : Technical Manager (West), KRIDL, Bangalore.

Name of work : Improvements to road from Hesaraghatta Main road to Babanna Layout Market area in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore.

Reference : BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014

Date of Testing : 03.07.2014

As per MORTH Table : 400-11



Sl. No.	Particulars	Test Results	Standards as per Specifications
1	Liquid Limit, %	24.00	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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AE12
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ಶಿಬ್ಬಹಳ್ಳಿ ಉಪವಿಭಾಗ, ದಾಸರಹಳ್ಳಿ ವಲಯ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಎಸ್.ಎಂ ರಸ್ತೆ, ರವೀಂದ್ರನಗರ, ಬೆಂಗಳೂರು

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QUALITY CONTROL REPORTS FOR
WE MIX MACADAM(WMM)



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Job No.: CTCE/BBMP/W.No.12/KRIDL/WMM/Gradation/2014-15



10.07.2014

GRADATION FOR WMM MORTH TABLE-400-11

Client : Asst. Executive Engineer, Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.

Agency : Technical Manager (West), KRIDL, Bangalore.

Name of Work : Improvements to road from Hesaraghatta Main road to Babanna Layout Market area in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore.

Reference : BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014

Date of Testing : 10.07.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **6990**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	150	150	2.1	97.9	95-100
22.4	2540	2690	38.5	61.5	60-80
11.2	1100	3790	54.2	45.8	40-60
4.75	950	4740	67.8	32.2	25-40
2.36	800	5540	79.3	20.7	15-30
0.600	650	6190	88.6	11.4	8-22
0.075	600	6790	97.1	2.9	0-8

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10.07.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	Asst. Executive Engineer, Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.
Agency	Technical Manager (West), KRIDL, Bangalore.
Name of the Work	Improvements to road from Hesaraghatta Main road to Babanna Layout Market area in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore.
Reference	BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	10.07.2014

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	389	388	22.78
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	88	89	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	301	299	
4	Aggregate Impact value = percent fines	22.62	22.94	
	$100 * (W_2/W_1)\%$			22.78

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

Note:

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ಶಿಕ್ಷಣ ಮತ್ತು ಸಂಶೋಧನೆ, ರಾಜಕಾರಣಿ ಪಾಲಯ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
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Job No.: CTCE/BBMP/W.No.12/KRIDL/WMM/S-T/2014-15

10.07.2014

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	Asst. Executive Engineer, Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.
Agency	Technical Manager (West), KRIDL, Bangalore.
Name of Work	Improvements to road from Hesaraghatta Main road to Babanna Layout Market area in Ward No.12, in Shettyhalli Sub Division, BBMP, Bangalore.
Reference	BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 30.06.2014
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	10.07.2014



Result : Flakiness Index = 12.36%

Elongation Index = 13.69%

Result : Combined Flakiness & Elongation index 26.05%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

Note:

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